



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,858	10/29/2003	Kirby Hayes	2216-001CIP	5709
27522	7590	07/06/2005	EXAMINER	
SEAN W. GOODWIN 237- 8TH AVE. S.E., SUITE 360 THE BURNS BUILDING CALGARY, AB T2G 5C3 CANADA			FULLER, BRYAN A	
			ART UNIT	PAPER NUMBER
			3676	
DATE MAILED: 07/06/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/694,858

Applicant(s)

HAYES, KIRBY

Examiner

Bryan A. Fuller

Art Unit

3676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/19/04</u> . | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because Figures 1a, 1b, 2a, and 2b have lines that point to something on the drawing but do not have a number attached to the lines. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

2. The abstract of the disclosure is objected to because the heading of the abstract should either read "ABSTRACT" or "ABSTRACT OF THE DISCLOSURE". Correction is required. See MPEP § 608.01(b).
3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The title is not commensurate because it does not mention that a process is claimed. The following title is suggested: PROCESS OF USING A PROPELLANT TREATMENT AND CONTINUOUS FOAM TO REMOVE WELL DEBRIS.
4. The disclosure is objected to because of the following informalities: Figure 4 is detailed under the BRIEF DESCRIPTION OF THE DRAWINGS section. Figure 4 does not actually exist. Figure 4 should be replaced with Figures 4a – 4c. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3676

6. Claims 1, 2, 14, 16, 20, 21, 24, and 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Wesson (6,336,506) and Abbott-Brown et al (6,173,783), and further in view of Hutchison (3,559,739).

With respect to claims 1, 2, 14, 16, 20, 21, 24, and 25: Wesson teaches in the abstract and in column 1, lines 23 – 44 a method and apparatus for treating a wellbore by running in a tubing string into the wellbore to position a propellant carrier adjacent the openings; overbalancing the wellbore to establish hydrostatic pressure on the formation; and igniting the propellant so as to produce a pressure event and a volume of gas directed into the formation. The reference also teaches that the propellant carrier is at the distal end of the tubing string. The reference teaches that the volume of gas produced is sufficient to dislodge debris in the formation. Finally, the reference teaches a differential fill flow sub for blocking communication between the tubing string and the annulus until circulating foam.

Wesson does not teach the injection of low-density foam through the tubing string to produce at least some debris from the formation and into the wellbore. Nor does Wesson use foam for conveying the debris from the wellbore by circulating the foam out of the wellbore to the surface until sufficient debris is removed. Wesson also does not teach the use of fluid to fill the tubing to overbalance the wellbore.

Abbott-Brown et al teaches in column 3, lines 30 – 52 a method of overbalancing a wellbore by filling the tubing with liquid.

Hutchison teaches in column 2, line 35 – column 6, line 23 the injection of low-density foam through the tubing string to produce at least some debris and conveying

Art Unit: 3676

the debris from the wellbore by circulating the foam out of the wellbore to the surface until sufficient debris is removed. Hutchison also teaches a pup length of tubing at the top of the tubing string; a seal between the wellbore and the pup length of tubing; and means for raising and lowering the pup length of tubing and the tubing a location below the openings. More specifically, the reference teaches a foam injection inlet in the tubing string at surface; a port in the tubing string adjacent and above the propellant carrier; and a foam discharge port from the annulus at the surface.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Wesson's invention in view of Abbott-Brown et al and Hutchison's methods and apparatus because injecting the low-density foam through the tubing string will produce at least some debris and convey the debris from the wellbore by circulating the foam out of the wellbore to the surface until sufficient debris is removed. Using a pup length of tubing at the top of the tubing string; a seal between the wellbore and the pup length of tubing; and means for raising and lowering the pup length of tubing and the tubing a location below the openings. Finally, using a foam injection inlet in the tubing string at the surface; a port in the tubing string adjacent and above the propellant carrier; and a foam discharge port from the annulus at the surface in view of the teachings of Hutchison. The motivation for the combination of these references is that Hutchison permits maintaining continuous circulation during such makeup or breakup-normal circulation down the tubing string and up the well annulus or reverse circulation down the well annulus and up the tubing string.

Art Unit: 3676

Additionally, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Wesson's invention in view of Abbott-Brown et al and use liquid to fill the tubing to overbalance the wellbore. The motivation to fill the tubing with liquid to overbalance the well is because it benefits the production of oil and gas by providing a means to back surge and clean the perforations of mud filtrate, cement contaminates and perforation debris.

7. Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wesson, Abbott-Brown et al, and Hutchison as applied to claims 1 and 14 above, and further in view of Leniek, Sr. (US 2001/0004937 A1).

With respect to claims 13 and 15: Wesson, Abbott-Brown et al, and Hutchison teach the features as claimed except for killing the wellbore and removing the tubing string. Leniek, Sr. teaches in column 5, lines 32 - 45 the technique of killing the wellbore and removing the tubing string. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the combination of Wesson, Abbott-Brown et al, and Hutchison's method by killing the wellbore and removing the tubing string in view of the teachings of Leniek, Sr. The motivation for this combination is that killing a wellbore is common when removing or installing tubing strings in a typical well design, particularly for pressurized wells.

8. Claims 6, 11 - 12, 22 - 23, and 25 - 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wesson, Abbot-Brown et al, and Hutchison as applied to claims 1 and 20 - 21 above, and further in view of Scott, III (5,441,110).

With respect to claims 6, 11 – 12, 22 – 23, and 25 - 26: Wesson, Abbott-Brown et al, and Hutchison teach the features as claimed except using a lubricator at surface atop the tubing string and having a drop bar releasably retained therein; and a firing head at the propellant carrier and actuable to ignite the propellant when the drop bar is released to fall down the tubing string to the propellant carrier. The reference does not teach the use of a trigger to release the drop bar. The references also do not teach propellant ignition by pumping liquid into the tubing string to a first pressure for actuating a pressure actuated firing head for actuating ignition of the propellant and then to a second pressure for actuating a pressure-actuated plug to open a port in the tubing string above the propellant carrier for injecting the foam. Scott, III teaches in column 11, line 50 – column 12, line 9 all the features that were just listed as not being taught in Wesson and Hutchison. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the combination of Wesson, Abbott-Brown et al, and Hutchison's method by adding the features of Scott, III. The motivation for this combination lies in the fact that these are common ignition triggering systems.

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wesson, Hutchison, Abbott-Brown et al, and Scott, III as applied to claims 1 and 6 above, and further in view of Huber et al (5,865,254).

With respect to claim 6: Wesson, Abbott-Brown et al, Hutchison and Scott, III teach the features as claimed except for opening a port in the tubing string above the propellant carrier actuated by the falling drop bar for injecting the low density foam there



Art Unit: 3676

through. Huber et al teaches in the abstract a port in the tubing string above the propellant carrier actuated by the falling drop bar for injecting the low-density foam there through. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the combination of Wesson, Hutchison, Abbott-Brown et al, and Scott, III's method by opening a port in the tubing string above the propellant carrier actuated by the falling drop bar for injecting the low density foam there through in view of the teachings of Huber et al. The motivation for the combination of these references is the usefulness of this during under balanced or overbalanced well perforation.

10. Claims 3 - 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wesson, Abbott-Brown et al, and Hutchison as applied to claim 1 above, and further in view of Kawabata (5888,021).

With respect to claims 3 - 5: Wesson, Abbott-Brown et al, and Hutchison teach the features as claimed except for being able to lower and raise the tubing string while continuously injecting foam. Kawabata teaches in column 6, lines 1 – 28 a method and apparatus that can lower and raise the tubing string while continuously injecting foam. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the combination of Wesson, Abbott-Brown et al, and Hutchison's method and apparatus by lowering and raising the tubing string while continuously injecting foam in view of the teachings of Kawabata. The motivation for this combination of references is that the foam can be distributed over a wide area and allows for a reduced quantity of foam or liquid agent to be used.

Art Unit: 3676

11. Claims 8 - 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wesson, Abbott-Browne et al, Hutchison, Scott, III, and Huber et al as applied to claims 1, 6, and 7 above, and further in view of Kawabata.

With respect to claims 8 - 10: Wesson, Abbott-Browne et al, Hutchison, Scott, III, and Huber et al teach the features as claimed except for being able to lower and raise the tubing string while continuously injecting foam. Kawabata teaches in column 6, lines 1 – 28 a method and apparatus that can lower and raise the tubing string while continuously injecting foam. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the combination of Wesson, Abbott-Browne et al, Hutchison, Scott, III, and Huber et al's method and apparatus by lowering and raising the tubing string while continuously injecting foam in view of the teachings of Kawabata. The motivation for this combination of references is that the foam can be distributed over a wide area and allows for a reduced quantity of foam or liquid agent to be used.

12. Claims 17 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wesson, Abbott-Brown et al, Hutchison, and Leniek, Sr. as applied to claims 14 - 16 above, and further in view of Kawabata.

With respect to claims 17 - 19: Wesson, Abbott-Brown et al, Hutchison, and Leniek, Sr. teach the features as claimed except for being able to lower and raise the tubing string while continuously injecting foam. Kawabata teaches in column 6, lines 1 – 28 a method and apparatus that can lower and raise the tubing string while continuously injecting foam. Therefore, it would have been obvious to one of ordinary

Art Unit: 3676

skill in the art at the time the invention was made to have modified the combination of Wesson, Abbott-Brown et al, Hutchison, and Leniek, Sr. method and apparatus by lowering and raising the tubing string while continuously injecting foam in view of the teachings of Kawabata. The motivation for this combination of references is that the foam can be distributed over a wide area and allows for a reduced quantity of foam or liquid agent to be used.

### ***Double Patenting***

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 1 – 13 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 - 12 of copending Application No. 10/650,709 in view of Abbott-Brown et al (6,173,783).

Application No. 10/650,709 teaches the features as claimed exactly except for line 5 of claim 1 where the overbalancing the wellbore is done "with liquid." Also claim 2 is not in Application No. 10/650,709. Claim 2 details out that the overbalancing of the wellbore is

Art Unit: 3676

done by filling the tubing with liquid. Abbott-Brown et al teaches in column 3, lines 30 – 52 a method of overbalancing a wellbore by filling the tubing with liquid.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used liquid to fill the tubing to overbalance the wellbore. The motivation to fill the tubing with liquid to overbalance the wellbore is because it benefits the production of oil and gas by providing a means to back surge and clean the perforations of mud filtrate, cement contaminates and perforation debris.

This is a provisional obviousness-type double patenting rejection.

15. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

16. Claims 14 – 26 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 13 - 25 of copending Application No. 10/650,709. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan A. Fuller whose telephone number is (571) 272-

Art Unit: 3676

8119. The examiner can normally be reached on M - Th 7:30 - 5:00 and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian E. Glessner can be reached on (571) 272-6843. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Brian E. Glessner  
Supervisory Patent Examiner  
Art Unit 3676

baf